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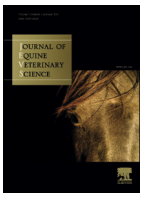

10th IEIDC Abstracts-Working Equids

074
Unraveling the causes of respiratory disease in the working equids of Ethiopia: A cross sectional survey

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Previous research has demonstrated that respiratory disease, particularly coughing and nasal discharge are consistently ranked in the top-three health concerns for working equid owners. However, there is little existing literature on the possible aetiology and these syndromes are poorly defined. This study aimed to better understand respiratory disease, including frequency of signs, in working equids and assess exposure to the major respiratory pathogens. A cross-sectional study was conducted across 19 sites *in Central Ethiopia.* Owners and horses were sampled using systematic random sampling from a selected focal point in the town. A brief questionnaire was administered to drivers/owners to ascertain horse details and history of respiratory signs or disease. A clinical examination was performed and a jugular blood sample was taken. Heat-treated serum was transported to the UK for testing. Serology for antibody titres to equine influenza virus (EIV) used a multispecies Influenza A competitive Enzyme-linked Immunosorbant Assay (ELISA). Samples showing a borderline negative result (<100% colour change) on ELISA were subsequently tested using haemagglutinin inhibition for EIV H7N7 (Prague) and H3N8 (Miami and Newmarket 2) strains. Detection of antibodies to equine arteritis virus (EAV) and *Streptococcus equi subsp. equi* were by ELISA. Positive samples on EAV ELISA were subject to virus neutralisation test. *S equi* samples were deemed positive if optical density (OD) >0.3 on ELISA. Complement fixation was used to determine serum antibody titres to equine herpes viruses (EHV-1/4) and equine rhinitis viruses (ERAV/ERBV). Over 19 sites, 350 participants were selected. Owners reported 38% animals examined had recent history of coughing (last 30 days), 8% had a history of nasal discharge and 3% had suffered other breathing problems. In addition 11% horses examined had a clinically significant nasal discharge. Serology results for 350 horses suggested recent exposure to *S equi* in 23%, EAV 3.4%, but exposure to influenza virus was very rare. Low antibody titres to EHV-1/4 and ERAV/ERBV were also detected. Clinical signs of respiratory disease were relatively uncommon on examination of these working horses; however owners reported higher levels of respiratory signs in the previous 30 days, particularly coughing, consistent with results from the previous participatory studies. It appears *S equi* is endemic in the population and is likely to be a significant contributor to respiratory disease in Ethiopian working equids. The low prevalence of EHV-1/4, ERAV/ERBV and EAV suggest the presence of these pathogens in the population but they are unlikely to be causing the majority of respiratory signs reported. Equine influenza did not appear to be present in the population in this region of Ethiopia. Other causes of respiratory signs such as inflammatory or allergic airway disease, or other pathogens should be further investigated.

086
Investigating Transplacental Transmission of Equine Piroplasmosis in Thoroughbred Foals in Trinidad

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Equine piroplasmosis caused by *Theileria equi* and *Babesia caballi* is endemic in Trinidad, West Indies. Transmission occurs mainly by ticks of the genus *Ixodidae*. *T. equi* can also be transmitted transplacentally, however transplacental transmission of *Babesia caballi* is unknown. Carrier mares may transmit *T. equi* across the placenta to infect the offspring which can result in abortions, stillbirths neonatal piroplasmosis or healthy carrier foals. Neonatal foals can show signs at birth or clinical signs can manifest at 2 to 3 days of age. Some of the clinical signs include icteric mucous membranes (Figure 1) and haemoglobinuria (Figure 2). This study aims to investigate the incidence of transplacental transmission of *Theileria* equi and *Babesia caballi* from thoroughbred mares naturally infected via the tick vector. EDTA blood and serum samples were collected from 118 mares in the fifth month of pregnancy. Samples were also collected from each of their foals within the first 36 hours of birth. All samples were analyzed microscopically for piroplasms. Serum ELISA, conventional and real time PCR amplification of the 18S rRNA gene from DNA extracted from whole blood for *B. caballi* were conducted. Serum ELISA, conventional PCR amplification of the 18S rRNA gene and real time PCR analysis based on ema -1 gene for *T. equi* were also performed on DNA extracted samples obtained from whole blood. Eighty three (74.7%) mares and 40 (44.9%) of their foals were seropositive for *B. caballi*. Four (3.4%) mares were positive for *B. caballi* by conventional PCR. Six (6.7%) of the foals were positive for *B. caballi* by real time PCR. Thirty-four (30.6%) mares and 15 (16.8%) of their foals were seropositive for *T. equi*. Twenty-seven (24.3%) mares and four (4.5%) foals were positive for *T. equi* by conventional PCR. Real time PCR analysis based on the ema − 1 gene revealed that seven (7.9%) of the foals were positive for *T. equi*. Transplacental transmission due to *T. equi* or *B. caballi* is a more common occurrence than previously suspected. Newborn foals should be screened for equine piroplasmosis at